In the Claims:

CLAIMS:

1. (Original) A conjugate comprising:

(a) a polypeptide having the amino acid sequence :

$$[Yn\cdots Y_1]ZX_1X_2X_3S(p)[W_1\cdots Wm]$$

wherein,

m equals 1 or 2;

n is an integer from 1 to 50;

S(p) is a phosphorylated serine residue or a phosphorylated threonine residue;

Z is any amino acid residue excepting serine residue or threonine residue; and

X_1, X_2, X_3, Y_1-Yn and W_1-Wm are each independently any amino acid residue; and

(b) at least one hydrophobic moiety being attached to said polypeptide,

the conjugate being capable of inhibiting an activity of glycogen synthase kinase-3 (GSK-3), wherein the hydrophobic moiety provides the conjugate with better (i) membrane permeability and/or (b) interaction with the hydrophobic patch of the GSK-3.

2. (Original) The conjugate of claim 1, wherein said at least one hydrophobic moiety is attached to an N-terminus and/or a C-terminus of said polypeptide.

3. (Canceled)

4. (Original) The conjugate of claim 1, wherein said at least one hydrophobic moiety comprises a hydrophobic peptide sequence.

5. (Canceled)

6. (Original) The conjugate of claim 1, wherein said at least one hydrophobic moiety comprises a fatty acid.

7. (Original) The conjugate of claim 6, wherein said fatty acid is attached to at least one amino acid residue.

8. (Original) The conjugate of claim 6, wherein said fatty acid is selected from the group consisting of myristic acid, lauric acid, palmitic acid, stearic acid, oleic acid, linoleic acid and linolenic acid.

9. (Canceled)

10. (Original) The conjugate of claim 1, wherein Y_3 is any amino acid residue except a glutamic acid residue.

11. (Original) The conjugate of claim 1, wherein Z is an alanine residue.

12. (Original) The conjugate of claim 1, wherein n is an integer from 1 to 15.

13. (Canceled)

14. (Original) The conjugate of claim 1, having the amino acid sequence set forth in SEQ ID NO:16.

15. (Original) A pharmaceutical composition comprising, as an active ingredient, the conjugate of claim 1, and a pharmaceutically acceptable carrier.

16. (Original) The pharmaceutical composition of claim 15, packaged in a packaging material and identified in print, on or in said packaging material, for use in the treatment of a biological condition associated with GSK-3 activity.

17. (Original) The pharmaceutical composition of claim 16, wherein said biological condition is selected from the group consisting of obesity, non-insulin

dependent diabetes mellitus, an insulin-dependent condition, an affective disorder, a neurodegenerative disease or disorder and a psychotic disease or disorder.

18-23. (Canceled)

24. (Original) The pharmaceutical composition of claim 15, further comprising at least one additional active ingredient that is capable of altering an activity of GSK-3.

25. (Original) The pharmaceutical composition of claim 24, wherein said additional active ingredient is insulin.

26. (Original) The pharmaceutical composition of claim 24, wherein said additional active ingredient is capable of inhibiting an activity of GSK-3.

27. (Canceled)

28. (Original) The pharmaceutical composition of claim 24, wherein said additional active ingredient is capable of downregulating an expression of GSK-3.

29-45. (Canceled)

46. (Original) A method of inhibiting an activity of GSK-3, the method comprising contacting cells expressing GSK-3 with an effective amount of the conjugate of claim 1.

47. (Original) The method of claim 46, wherein said activity is a phosphorylation activity and/or an autophosphorylation activity.

48. (Original) The method of claim 46, wherein said contacting is effected *in vitro*.

49. (Original) The method of claim 46, wherein said contacting is effected *in vivo*.

50-62. (Canceled)

63. (Original) The method of claim 46, further comprising contacting said cells with at least one an additional active ingredient, said additional active ingredient being capable of altering an activity of GSK-3.

64. (Original) The method of claim 63, wherein said additional active ingredient is insulin.

65. (Original) The method of claim 63, wherein said additional active ingredient is capable of inhibiting an activity of GSK-3.

66. (Canceled)

67. (Original) The method of claim 63, wherein said additional active ingredient is capable of downregulating an expression of GSK-3.

68-70. (Canceled)

71. (Original) A method of potentiating insulin signaling, the method comprising contacting insulin responsive cells with an effective amount of the conjugate of claim 1.

72. (Original) The method of claim 71, further comprising contacting said cells with insulin.

73. (Original) The method of claim 71, wherein said contacting is effected *in vitro*.

74. (Original) The method of claim 71, wherein said contacting is effected *in vivo*.

75-87. (Canceled)

88. (Currently Amended) A method of ~~Use of the conjugate of claim 1 for~~ treating a biological condition associated with GSK-3 activity, the method comprising administering to a subject in need thereof a therapeutically effective amount of the conjugate of claim 1.

89. (Currently Amended) The ~~use~~ method of claim 88, wherein said biological condition is selected from the group consisting of obesity, non-insulin dependent diabetes mellitus, an insulin-dependent condition, an affective disorder, a neurodegenerative disease or disorder and a psychotic disease or disorder.

90. (Currently Amended) The method~~use~~ of claim 89, wherein said affective disorder is selected from the group consisting of a unipolar disorder and a bipolar disorder.

91-92. (Canceled)

93. (Currently Amended) The method~~use~~ of claim 89, wherein said neurodegenerative disorder results from an event selected from the group consisting of cerebral ischemia, stroke, traumatic brain injury and bacterial infection.

94. (Currently Amended) The method~~use~~ of claim 89, wherein said neurodegenerative disorder is a chronic neurodegenerative disorder.

95. (Currently Amended) The method~~use~~ of claim 94, wherein said chronic neurodegenerative disorder results from a disease selected from the group consisting of Alzheimer's disease, Huntington's disease, Parkinson's

disease, AIDS associated dementia, amyotrophic lateral sclerosis (AML) and multiple sclerosis.

96. (Currently Amended) The ~~use~~ method of claim 89, wherein said psychotic disorder is schizophrenia.

97. (Currently Amended) The ~~use~~ method of claim 88, further comprising ~~use of~~administering to the subject at least one additional active ingredient, said at least one additional active ingredient being capable of altering an activity of GSK-3.

98. (Currently Amended) The ~~use~~ method of claim 97, wherein said additional active ingredient is insulin.

99. (Currently Amended) The ~~use~~ method of claim 97, wherein said additional active ingredient is capable of inhibiting an activity of GSK-3.

100. (Canceled)

101. (Currently Amended) The ~~use~~ method of claim 97, wherein said additional active ingredient is capable of downregulating an expression of GSK-3.

102-117. (Canceled)

118. (Currently Amended) A method of treating an affective disorder, the method comprising administering to a subject in need thereof a therapeutically effective amount of ~~Use of~~ at least one compound that is capable of specifically inhibiting an activity of GSK-3 ~~for the treatment of an affective disorder~~.

119. (Currently Amended) The ~~use~~ method of claim 118, wherein said affective disorder is selected from the group consisting of a unipolar disorder and bipolar disorder.

120. (Currently Amended) The ~~use~~ method of claim 119, wherein said unipolar disorder is depression.

121. (Currently Amended) The ~~use~~ method of claim 119, wherein said bipolar disorder is manic depression.

122. (Currently Amended) The ~~use~~ method of claim 118, wherein said compound is a polypeptide having the amino acid sequence:

$$[Yn\cdots Y_1]ZX_1X_2X_3S(p)[W_1\cdots Wm]$$

wherein,

m equals 1 or 2;

n is an integer from 1 to 50;

S(p) is a phosphorylated serine residue or a phosphorylated threonine residue;

Z is any amino acid residue excepting serine residue or threonine residue; and

X_1, X_2, X_3, Y_1-Yn and W_1-Wm are each independently any amino acid residue.

123. (Currently Amended) The ~~use~~ method of claim 122, wherein Y_3 is any amino acid residue except a glutamic acid residue.

124. (Currently Amended) The ~~use~~ method of claim 122, wherein Z is an alanine residue.

125. (Currently Amended) The ~~use~~ method of claim 122, wherein n is an integer from 1 to 15.

126. (Canceled)

127. (Currently Amended) The ~~use~~ method of claim 122, wherein said polypeptide has an amino acid sequence selected from the group consisting of the

amino acid sequences set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:12.

128. (Currently Amended) The ~~use~~ method of claim 122, wherein said polypeptide further comprises at least one hydrophobic moiety being attached thereto.

129. (Currently Amended) The use of claim 128, wherein said at least one hydrophobic moiety is attached to an N-terminus and/or a C-terminus of said polypeptide.

130. (Canceled)

131. (Currently Amended) The ~~use~~ method of claim 128, wherein said at least one hydrophobic moiety comprises a hydrophobic peptide sequence.

132. (Currently Amended) The ~~use~~ method of claim 131, wherein said hydrophobic peptide sequence comprises at least five consecutive amino acid residues selected from the group consisting of an alanine residue, a cysteine residue, a glycine residue, an isoleucine residue, a leucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a methionine residue, a proline residue and a tryptophan residue.

133. (Currently Amended) The ~~use~~ method of claim 128, wherein said at least one hydrophobic moiety comprises a fatty acid.

134. (Currently Amended) The ~~use~~ method of claim 133, wherein said fatty acid is attached to at least one amino acid residue.

135. (Currently Amended) The ~~use~~ method of claim 133, wherein said fatty acid is selected from the group consisting of myristic acid, lauric acid, palmitic acid, stearic acid, oleic acid, linoleic acid and linolenic acid.

136-140. (Canceled)

141. (Currently Amended) The ~~use~~ method of claim 128, wherein said compound has the amino acid sequence set forth in SEQ ID NO:16.

142. (Currently Amended) A method of up-regulating a β-catenin level in a hippocampus of a subject in need thereof, the method comprising administering to the subject a thera[eutically effective amount of ~~use of~~ at least one compound that is capable of specifically inhibiting an activity of GSK-3 ~~for up-regulating a β-catenin level in a hippocampus of a subject~~.

143. (Currently Amended) The ~~use~~ method of claim 142, wherein said compound is a polypeptide having the amino acid sequence:

$$[Yn\cdots Y_1]ZX_1X_2X_3S(p)[W_1\cdots Wm]$$

wherein,

m equals 1 or 2;

n is an integer from 1 to 50;

S(p) is a phosphorylated serine residue or a phosphorylated threonine residue;

Z is any amino acid residue excepting serine residue or threonine residue; and

X_1, X_2, X_3, Y_1-Yn and W_1-Wm are each independently any amino acid residue.

144. (Currently Amended) The ~~use~~ method of claim 143, wherein Y_3 is any amino acid residue except a glutamic acid residue.

145. (Currently Amended) The ~~use~~ method of claim 143, wherein Z is an alanine residue.

146. (Currently Amended) The ~~use~~ method of claim 143, wherein n is an integer from 1 to 15.

147. (Canceled)

148. (Currently Amended) The ~~use~~ method of claim 143, wherein said polypeptide has an amino acid sequence selected from the group consisting of the amino acid sequences set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:9 and SEQ ID NO:12.

149. (Currently Amended) The ~~use~~ method of claim 143, wherein said polypeptide further comprises at least one hydrophobic moiety being attached thereto.

150. (Currently Amended) The use of claim 149, wherein said at least one hydrophobic moiety is attached to an N-terminus and/or a C-terminus of said polypeptide.

151. (Canceled)

152. (Currently Amended) The ~~use~~ method of claim 149, wherein said at least one hydrophobic moiety comprises a hydrophobic peptide sequence.

153. (Currently Amended) The ~~use~~ method of claim 152, wherein said hydrophobic peptide sequence comprises at least five consecutive amino acid residues selected from the group consisting of an alanine residue, a cysteine residue, a glycine residue, an isoleucine residue, a leucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a methionine residue, a proline residue and a tryptophan residue.

154. (Currently Amended) The ~~use~~ method of claim 149, wherein said at least one hydrophobic moiety comprises a fatty acid.

155. (Currently Amended) The ~~use~~ method of claim 154, wherein said fatty acid is attached to at least one amino acid residue.

156. (Currently Amended) The ~~use~~ method of claim 154, wherein said fatty acid is selected from the group consisting of myristic acid, lauric acid, palmitic acid, stearic acid, oleic acid, linoleic acid and linolenic acid.

157-161. (Canceled)

162. (Currently Amended) The ~~use~~ method of claim 149, wherein said compound has the amino acid sequence set forth in SEQ ID NO:16.

163. (Original) A process of producing the conjugate of claim 1, the process comprising:

providing said polypeptide;

providing said at least one hydrophobic moiety; and

conjugating said at least one hydrophobic moiety and said polypeptide.

164- 166. (Canceled)

167. (Original) The conjugate of claim 4, wherein said hydrophobic peptide sequence comprises at least five consecutive amino acid residues selected from the group consisting of an alanine residue, a cysteine residue, a glycine residue, an isoleucine residue, a leucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a methionine residue, a proline residue and a tryptophan residue.

168 -178 (Canceled)